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A RUBBER COMPOSITION FOR TIRE TREADS AND A PNEUMATIC TIRE

HAVING A TREAD MADE OF SUCH COMPOSITION

BACKGROUND OF THE INVENTION

The present invention relates to a rubber composition for tire
treads and a pneumatic tire having a tread made of the rubber
composition, and particularly relates to a rubber composition for tire
5 treads significantly improving tires in grip performance on wet road with
remaining low fuel consumption of automobiles and a pneumatic tire
having a tread made of the rubber composition.

In recent years, tires for automobiles have required
performances, such as the controllability in driving, abrasion resistance,
10 riding comfort as well as the low fuel consumption. Steps taken to
achieve such performances include improving braking and driving on
wet roads at high driving speed, improving controllability in driving by
increasing the grip force on road surfaces, increasing cornering
performance by increasing the block stiffness of the tire tread pattern to
15 inhibit the tire from block deformation at cornering, and inhibiting
hydroplaning from occurring by inhibiting groove parts on tire tread
from deforming to achieve smooth draining. Recently, to satisfy these
requirements, tires having an increased grip performance on wet road
surface are provided by using rubber compositions obtained by mixing
20 silica with SBR of a high styrene unit content for tire treads.

However, although the rubber compositions for tire treads
mentioned above provide an increased grip force at a low temperature
range of at most 15°C of road surface, they do not provide a sufficient
grip force on wet or semi-wet road surface. Rubber compositions
25 containing silica decrease in stiffness and decrease significantly in grip